IN THE CLAIMS:

1. (withdrawn) A ceramic composite electrolytic device for generating electrical power or for generating oxygen comprising:

a plurality of electrically connected solid state electrolytic cells, each of said cells comprising:

a ceramic composite body with first and second electrically conductive porous gas permeable electrode layers on opposite surfaces of said ceramic composite body, said first layer forming an anode and said second layer forming a cathode, and

a bipolar metal member for engagement with said ceramic composite body of said cell on one side, and with said ceramic composite body of another adjacent cell on the other side,

said ceramic composite body further comprising a metal member having a pattern of openings formed within a portion of the metal member for supporting a ceramic material,

said device further comprising a power connection connecting the output of said cells and an air supply to said cathode of said cell.

2. (cancelled)

3. (cancelled)

4. (previously presented) A method for manufacturing a ceramic composite oxygen or power generating cell comprising

providing a first metal member having a perimeter and a section defining a pattern of openings;

applying a ceramic material to the section,

firing the ceramic material to create a ceramic composite body;

coating at least a portion of the ceramic composite body with an electrically conductive material;

firing the electrically conductive material to form an electrode layer;

providing a bipolar metal member having contact portions extending outwardly in one or two directions from a plane of the bipolar metal member for engagement with the ceramic composite body;

connecting the bipolar metal member to the perimeter of the first metal member of the ceramic composite body wherein a gas tight chamber is formed between said ceramic composite body and said bipolar metal member.

5. (previously presented) The method of Claim 4, wherein the step of applying the layer of ceramic material to the pattern of openings comprises dipping.

6. (cancelled)

7. (previously presented) The method of Claim 4, wherein the bipolar metal member and the first metal member of the ceramic composite body form an output for removing exhaust generated in said fuel chamber of said cell.

8. (previously presented) The method of Claim 4, further comprising applying an electrocatalyst layer to the ceramic material of the ceramic composite body.

9. (previously presented) The method of Claim 4, further comprising providing a current collector between the electrode layer and the bipolar metal member.

10. (previously presented) The method of Claim 4, further comprising sealing the ceramic composite body with seal slip coat.

11. (previously presented) The method of Claim 4, further comprising attaching at least one metallic frame to said bipolar metal member.

12. (previously presented) The method of Claim 4, wherein the gas tight seal is formed by welding.

13. (previously presented) The method of Claim 4, further comprising forming three dimensional structures on the surface of the bipolar metal member.

14. (previously presented) The method of Claim 4, wherein the three dimensional structures are formed by embossing.

15. (previously presented) The method of Claim 4, wherein the pattern of openings is formed by photochemical etching or photolithography.

16. (previously presented) The method of Claim 4, further comprising

sealing the ceramic composite body with a seal slip coat;

attaching at least one metallic frame to said bipolar metal member, for supporting said bipolar member,

wherein the bipolar metal member has three dimensional structures on the surface thereof and an electrical contact layer disposed on said three dimensional structures, and further wherein the metal member of said ceramic composite body has a thickness of from 0.001 to 0.008 inches.

17. (previously presented) The method of Claim 16, further comprising

providing an output for removing exhaust generated in said cell;

providing a heat unit for heating said cell to a desired reaction temperature;

providing a fan for supplying air; and

providing at least one arm extending from the ceramic composite body.

18. (previously presented) The method of Claim 4, wherein the pattern of openings is a hexagonal close pack cell pattern, and further wherein the first metal member has a thickness of from 0.001 to 0.008 inches.

19. (previously presented) The method of Claim 16, further comprising:

providing a fluid fuel input in an arm;

providing a gas output in an arm;

wherein:

the fluid fuel input and the gas output are in the same or different arms.

20. (previously presented) The method of Claim 19, further comprising

applying an electrocatalyst layer to the ceramic material of the ceramic composite body.

21. (previously presented) The method of Claim 4, further comprising

disposing solid fuel between the bipolar metal member and the first metal member of the ceramic composite body.

22. (currently amended) The method of Claim 4, further comprising applying an electrocatalyst layer to the ceramic material of the ceramic body, and further wherein

the electrode layer comprises silver or a mixture of silver and a second metal selected from the group consisting of gold; platinum; palladium; iridium; and mixtures thereof; and ~~further wherein~~

the electrocatalyst layer is comprised of a mixture of solid electrolyte particles and transition metal oxide particles.

23. (previously presented) A method of manufacturing a ceramic composite oxygen or power generating cell stack comprising

(a) providing at least two ceramic composite cells, a first cell and a second adjacent cell, each cell comprising:

a ceramic composite body comprising a first metal member having a pattern of openings formed within a portion of the metal member and a ceramic material disposed on said pattern of openings;

~~a~~ first and second electrically conductive porous gas permeable electrode layers on opposite surfaces of said ceramic composite body, said first electrode layer forming an anode and said second electrode layer forming a cathode;

a bipolar metal member for engagement with the ceramic composite body of said first cell on one side and with the ceramic composite body of the second cell on the other side;

wherein said bipolar metal member and said first metal member are interconnected at a gas tight seal surrounding said ceramic material to form a gas tight chamber and together forming an output for removing exhaust generated in said gas tight chamber of said cell; and

(b) interconnecting the ceramic composite cells so that said ceramic composite cells are arranged in electrical series and gas parallel.

24. (previously presented) The method of Claim 23, further comprising

disposing said stack at least partially within a thermal shell.

25. (previously presented) The method of Claim 24, wherein said thermal shell has a first, a second and a third concurrent metal layer.

26. (previously presented) The method of Claim 24, further comprising

surrounding said stack with insulating material before inserting said stack into the thermal shell.

27. (previously presented) The method of Claim 23, further comprising

providing at least one current collector interspaced between an electrode layer of one cell and the bipolar metal member of the adjacent cell.

28. (previously presented) The method of Claim 23, further comprising

providing a heating element to each end of the stack.

29. (previously presented) The method of Claim 23, further comprising

disposing said stack at least partially within a thermal shell;

surrounding said stack with insulating materials before inserting said stack into the thermal shell;

providing at least one current collector interspaced between an electrode layer of one cell and the bipolar metal member of the adjacent cell; and

providing a heating element to each end of the stack.

30. (previously presented) The method of Claim 29, wherein the cells further comprise:

three dimensional structures on the surface of the bipolar metal member;

ceramic composite member with seal slip coat;

at least one metallic frame to said bipolar metal member, for supporting said bipolar member,

wherein the metal member of said ceramic composite body has a thickness of from 0.001 to 0.008 inches.

31. (previously presented) The method of Claim 29, wherein the cells further comprise:

an output for removing exhaust generated in said cell;

a heat unit for heating said cells to a desired reaction temperature;

a fan for supplying air;

at least one arm extending from the ceramic composite body.